

ABSTRACT OF THE DISCLOSURE

In accordance with one embodiment of the present invention, a device for generating hydrogen from a water vapor containing exhaust is provided. The device comprises an exhaust diverter and a hydrogen generation section. The exhaust diverter is configured to divert a portion of the exhaust to the hydrogen generation section. The hydrogen generation section comprises an electrolysis unit defining a hermetically sealed void volume configured to accumulate and store hydrogen. The exhaust diverter may be placed in communication with a heat exchanger configured to increase a fractional relative humidity of the diverted exhaust by cooling the diverted exhaust. In accordance with 37 CFR 1.72(b), the purpose of this abstract is to enable the United States Patent and Trademark Office and the public generally to determine quickly from a cursory inspection the nature and gist of the technical disclosure. The abstract will not be used for interpreting the scope of the claims.